

REMARKS

In view of the above amendments and the following remarks, reconsideration and further examination are respectfully requested.

I. Amendments to the Specification and Abstract

The specification and abstract have been reviewed and revised to improve their English grammar. The amendments to the specification and abstract have been incorporated into a substitute specification and abstract. Attached are two versions of the substitute specification and abstract, a marked-up version showing the revisions, as well as a clean version. No new matter has been added.

II. Amendments to the Claims

Claims 38, 41, 67 and 68 have been amended to clarify features of the invention recited therein.

It is also noted that claims 28-36, 38, 39, 41, 51-64, 67 and 68 have been amended to make a number of editorial revisions thereto. These editorial revisions have been made to place the claims in better U.S. form. Further, these editorial revisions have not been made to narrow the scope of protection of the claims, or to address issues related to patentability, and therefore, these amendments should not be construed as limiting the scope of equivalents of the claimed features offered by the Doctrine of Equivalents.

III. Informalities

Claims 38, 41, 67 and 68 were objected to in view of various informalities identified on page 2 of the Office Action. Withdrawal of these objections is respectfully submitted since claims 38, 41, 67 and 68 have been amended to resolve the problems identified by the Examiner.

IV. 35 U.S.C. § 102 Rejection

Claims 28-68 were rejected under 35 U.S.C. § 102(b) as being anticipated by Nakajo (U.S. 6,925,042). This rejection is believed clearly inapplicable to amended independent claims 28, 32, 33, 34, 55, 59, 60 and 61 and the claims that depend therefrom for the following reasons.

A. Claims 28-32, 35-38, 4242-45, 48, 49, 51, 52, 54-559, 62, 63, 67 and 67

Amended independent claim 28 recites a method including, in part, forming marks and/or spaces to vary optical characteristics of a recording film of an optical recording medium, forming the marks by at least one of (i) recording pulses in which a power of a laser beam is switched between power levels including a recording power and an erasure power, and (ii) recording a recording pulse train in which the power of the laser beam is switched between the power levels, and recording information to the optical recording medium at two different linear velocities. In addition, claim 28 recites that the recording power is controlled so as to satisfy $(P_{p1}/P_{pth1}) < (P_{p2}/P_{pth2})$, where (i) P_{pth1} is a threshold value of the recording power at which a quality of a reproduction signal drops under a specific value, when a test signal is recorded at a first linear velocity v_1 , with the erasure power fixed and the recording power varied, (ii) P_{pth2} is the threshold value of the recording power at which the quality of the reproduction signal drops under a specific value, when the test signal is recorded at a second linear velocity v_2 that is

higher than the first linear velocity v1, with the erasure power fixed and the recording power varied, (iii) Pp1 is the recording power, when the information is recorded at the first linear velocity v1, and (iv) Pp2 is the recording power, when the information is recorded at the second linear velocity v2.

Initially, the Applicants note that the Office Action relies on Figs. 15 and 16 of Nakajo for disclosing the above-mentioned limitations required by claim 28. However, it is respectfully submitted that Figs. 15 and 16 of Nakajo fail to disclose or suggest the above-mentioned distinguishing features, as recited in amended independent claim 28.

Rather, Fig. 15 of Nakajo merely teaches that a relationship between a writing (i.e., recording) linear velocity and a writing (i.e., recording) power is expressed as a linear function, when a target value of asymmetry remains constant. In other words, Nakajo only discloses a relationship between the “recording linear velocity” and the “recording power,” wherein the relationship is linear.

Thus, in view of the above, it is clear that Nakajo requires a linear relationship between the “recording linear velocity” and the “recording power,” but fails to disclose or suggest that the recording power is controlled so as to satisfy $(Pp1/Pp_{th1}) < (Pp2/Pp_{th2})$, where (i) Pp_{th1} is a threshold value of the recording power at which a quality of a reproduction signal drops under a specific value, when a test signal is recorded at a first linear velocity v1, with the erasure power fixed and the recording power varied, (ii) Pp_{th2} is the threshold value of the recording power at which the quality of the reproduction signal drops under a specific value, when the test signal is recorded at a second linear velocity v2 that is higher than the first linear velocity v1, with the erasure power fixed and the recording power varied, (iii) Pp1 is the recording power, when the

information is recorded at the first linear velocity v_1 , and (iv) P_{p2} is the recording power, when the information is recorded at the second linear velocity v_2 , as required by claim 28.

Now turning to Fig. 16 of Nakajo, the Applicants note that Fig. 16 teaches that an appropriate writing (i.e., recording) power P_1 is determined based on one writing (i.e., recording) linear velocity V_1 from among a variety of writing (i.e., recording) linear velocities, and teaches that a recording power (P_e and P_i) at other recording linear velocities (V_i and V_e) is calculated based on a linear function.

Thus, in view of the above, even though Nakajo teaches that the appropriate recording power P_1 is determined based on recording velocity V_1 and teaches that the other recording powers P_e and P_i at the other recording linear velocities V_i and V_e are calculated based on a linear function, Nakajo still fails to disclose or suggest that the recording power is controlled so as to satisfy $(P_{p1}/P_{pth1}) < (P_{p2}/P_{pth2})$, where (i) P_{pth1} is a threshold value of the recording power at which a quality of a reproduction signal drops under a specific value, when a test signal is recorded at a first linear velocity v_1 , with the erasure power fixed and the recording power varied, (ii) P_{pth2} is the threshold value of the recording power at which the quality of the reproduction signal drops under a specific value, when the test signal is recorded at a second linear velocity v_2 that is higher than the first linear velocity v_1 , with the erasure power fixed and the recording power varied, (iii) P_{p1} is the recording power, when the information is recorded at the first linear velocity v_1 , and (iv) P_{p2} is the recording power, when the information is recorded at the second linear velocity v_2 , as required by claim 28.

Therefore, because of the above-mentioned distinctions it is believed clear that independent claim 28 and claims 29-31, 35-38, 42, 44, 48, 49, 51, 52 and 54 that depend therefrom are not anticipated by Nakajo.

Additionally, the Applicants note that according to the structure required by claim 28, a ratio of the recording power to a power in which jitter is a threshold value is set relatively small at a lower linear velocity and is set relatively large at a higher linear velocity, satisfying the $(Pp1/Ppth1) < (Pp2/Ppth2)$ relationship, as recited in claim 28.

In light of the above, Nakajo does not disclose or suggest the relationship between the linear velocity and power ratio, which results from the structure required by claim 28, because Nakajo fails to disclose or suggest that the recording power is controlled so as to satisfy $(Pp1/Ppth1) < (Pp2/Ppth2)$, where (i) $Ppth1$ is a threshold value of the recording power at which a quality of a reproduction signal drops under a specific value, when a test signal is recorded at a first linear velocity $v1$, with the erasure power fixed and the recording power varied, (ii) $Ppth2$ is the threshold value of the recording power at which the quality of the reproduction signal drops under a specific value, when the test signal is recorded at a second linear velocity $v2$ that is higher than the first linear velocity $v1$, with the erasure power fixed and the recording power varied, (iii) $Pp1$ is the recording power, when the information is recorded at the first linear velocity $v1$, and (iv) $Pp2$ is the recording power, when the information is recorded at the second linear velocity $v2$, as required by claim 28.

Amended independent claims 32, 55 and 59 are directed to a method, an apparatus and an apparatus, respectively and each recite features that correspond to the above-mentioned distinguishing features of independent claim 28. Thus, for the same reasons discussed above, it is respectfully submitted that independent claims 32, 55 and 59 and claims 43, 45, 56-58, 62, 63, 65 and 67 that depend therefrom are allowable over the prior art of record.

Furthermore, there is no disclosure or suggestion in Nakajo or elsewhere in the prior art of record which would have caused a person of ordinary skill in the art to modify Nakajo to

obtain the invention of independent claims 28, 32, 55 and 59 and claims 29-31, 35-38, 42-45, 48, 49, 51, 52, 54, 56-58, 62, 63, 65 and 67 that depend therefrom. Accordingly, it is respectfully submitted that independent claims 28, 32, 55 and 59 and claims 29-31, 35-38, 42-45, 48, 49, 51, 52, 54, 56-58, 62, 63, 65 and 67 that depend therefrom are clearly allowable over the prior art of record.

B. Claims 33, 34, 39-41, 46, 47, 50, 53, 60, 61, 64, 66 and 68

Amended independent claim 33 recites a method including, in part, forming marks and/or spaces to vary optical characteristics of a recording film of an optical recording medium, forming the marks by at least one of (i) recording pulses in which a power of a laser beam is switched between power levels including a recording power and an erasure power, and (ii) recording a recording pulse train in which the power of the laser beam is switched between the power levels, and recording information to the optical recording medium at two different linear velocities. In addition, claim 33 recites that the recording power is controlled so as to satisfy $a1 < a2$, where (i) $a1$ is an asymmetry of a reproduction signal, when a test signal is recorded at a first linear velocity $v1$, with the erasure power fixed and the recording power varied, and (ii) $a2$ is the asymmetry of the reproduction signal, when the test signal is recorded at a second linear velocity $v2$ that is higher than the first linear velocity $v1$, with the erasure power fixed and the recording power varied, as recited in claim 33.

Initially, the Applicants note that the Office Action relies on Figs. 15, 16 and 4 of Nakajo for disclosing the above-mentioned limitations required by claim 33. However, it is respectfully submitted that Figs. 15, 16 and 4 of Nakajo fail to disclose or suggest the above-mentioned distinguishing features, as recited in amended independent claim 33.

Rather, as discussed above, Fig. 15 of Nakajo merely teaches that a relationship between a writing (i.e., recording) linear velocity and a writing (i.e., recording) power is expressed as a linear function, when a target value of asymmetry remains constant. In other words, Nakajo only discloses a relationship between the “recording linear velocity” and the “recording power,” wherein the relationship is linear.

Thus, in view of the above, it is clear that Nakajo requires a linear relationship between the “recording linear velocity” and the “recording power,” but fails to disclose or suggest that the recording power is controlled so as to satisfy $a1 < a2$, where (i) $a1$ is an asymmetry of a reproduction signal, when a test signal is recorded at a first linear velocity $v1$, with the erasure power fixed and the recording power varied, and (ii) $a2$ is the asymmetry of the reproduction signal, when the test signal is recorded at a second linear velocity $v2$ that is higher than the first linear velocity $v1$, with the erasure power fixed and the recording power varied, as recited in claim 33.

Now turning to Fig. 16 of Nakajo, as discussed above the Applicants note that Fig. 16 teaches that an appropriate writing (i.e., recording) power $P1$ is determined based on one writing (i.e., recording) linear velocity $V1$ from among a variety of writing (i.e., recording) linear velocities, and teaches that a recording power (P_e and P_i) at other recording linear velocities (V_i and V_e) is calculated based on a linear function.

Thus, in view of the above, even though Nakajo teaches that the appropriate recording power $P1$ is determined based on recording velocity $V1$ and teaches that the other recording powers P_e and P_i at the other recording linear velocities V_i and V_e are calculated based on a linear function, Nakajo still fails to disclose or suggest that the recording power is controlled so as to satisfy $a1 < a2$, where (i) $a1$ is an asymmetry of a reproduction signal, when a test signal is

recorded at a first linear velocity v1, with the erasure power fixed and the recording power varied, and (ii) a2 is the asymmetry of the reproduction signal, when the test signal is recorded at a second linear velocity v2 that is higher than the first linear velocity v1, with the erasure power fixed and the recording power varied, as recited in claim 33.

Now turning to Fig. 4 of Nakajo, the Applicants note that Fig. 4 merely teaches a usable range of irradiation time of recording a laser pulse relative to the recording linear velocity, but fails to disclose or suggest the recording power is controlled so as to satisfy $a1 < a2$, where (i) a1 is an asymmetry of a reproduction signal, when a test signal is recorded at a first linear velocity v1, with the erasure power fixed and the recording power varied, and (ii) a2 is the asymmetry of the reproduction signal, when the test signal is recorded at a second linear velocity v2 that is higher than the first linear velocity v1, with the erasure power fixed and the recording power varied, as recited in claim 33.

Therefore, because of the above-mentioned distinctions it is believed clear that independent claim 33 and claims 39-41, 46, 50 and 53 that depend therefrom are not anticipated by Nakajo.

Additionally, the Applicants note that according to the structure required by claim 33, an asymmetry of the reproduction signal is set relatively lower at a lower linear velocity and is set relatively higher at a higher linear velocity, satisfying the $a1 < a2$ relationship, as recited in claim 33.

In light of the above, Nakajo does not disclose or suggest the relationship between the linear velocity and the asymmetry, which results from the structure required by claim 33, because Nakajo fails to disclose or suggest that the recording power is controlled so as to satisfy $a1 < a2$, where (i) a1 is an asymmetry of a reproduction signal, when a test signal is recorded at a

first linear velocity v1, with the erasure power fixed and the recording power varied, and (ii) a2 is the asymmetry of the reproduction signal, when the test signal is recorded at a second linear velocity v2 that is higher than the first linear velocity v1, with the erasure power fixed and the recording power varied, as recited in claim 33.

Amended independent claims 34, 60 and 61 are directed to a method, an apparatus and an apparatus, respectively and each recite features that correspond to the above-mentioned distinguishing features of independent claim 33. Thus, for the same reasons discussed above, it is respectfully submitted that independent claims 34, 60 and 61 and claims 47, 65, 66 and 68 that depend therefrom are allowable over the prior art of record.

Furthermore, there is no disclosure or suggestion in Nakajo or elsewhere in the prior art of record which would have caused a person of ordinary skill in the art to modify Nakajo to obtain the invention of independent claims 33, 34, 60 and 61 and claims 39-41, 46, 47, 50, 53, 64, 66 and 68 that depend therefrom. Accordingly, it is respectfully submitted that independent claims 33, 34, 60 and 61 and claims 39-41, 46, 47, 50, 53, 64, 66 and 68 that depend therefrom that depend therefrom are clearly allowable over the prior art of record.

V. Conclusion

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance and an early notification thereof is earnestly requested. The Examiner is invited to contact the undersigned by telephone to resolve any remaining issues.

Respectfully submitted,

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